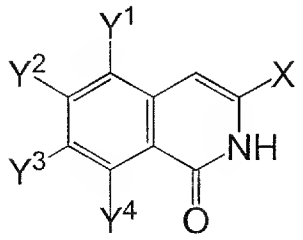
**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (Currently amended) A compound represented by the following formula (1):

~~[Formula 1]~~




(1)

wherein,

$Y^1$ and $Y^4$ are independently selected from a hydrogen atom and a halogen atom,

either one of $Y^2$ and $Y^3$ represents $-NR^1R^2$, and the other represents a hydrogen atom or a halogen atom;

X represents an aryl group or a heteroaryl group, and the aryl group or heteroaryl group may be substituted with one or more substituents selected from Group A;

Group A consists of a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected from a halogen atom, an aryl group, a heteroaryl group,

$-OR^{11}$, and $-NR^{12}R^{13}$), a $C_{2-7}$ alkenyl group (wherein the $C_{2-7}$ alkenyl group may be substituted with one or more substituents selected from a halogen atom, a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkyl group, an aryl group, and a heteroaryl group), a $C_{2-7}$ alkynyl group (wherein the $C_{2-7}$ alkynyl group may be substituted with one or more substituents selected from a halogen atom, a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkyl group, an aryl group, and a heteroaryl group), a halogen atom, a hydroxyl group, an aryl group, a heteroaryl group, a cyano group, an amino group (wherein the nitrogen atom of the amino group may be substituted with one or two substituents selected from a $C_{1-8}$ alkyl group, which may be substituted with $-OR^{11}$ or $-NR^{12}R^{13}$, an aryl group, an aryl $C_{1-6}$ alkyl group, and a heteroaryl group), $-S(O)_nR^{14}$ (wherein n represents an integer between 0 and 2), a $C_{1-6}$ alkoxy group (wherein the alkoxy group may be substituted with one or more groups selected from an aryl group, a heteroaryl group, $-OR^{11}$, $-NR^{12}R^{13}$, and a halogen atom), a 4- to 7-membered hetero ring group (wherein the hetero ring group may be substituted with one or more substituents selected from Group D), an aryloxy group, a heteroaryloxy group, and a $C_{1-6}$ alkylenedioxy group; wherein $R^{11}$, $R^{12}$, $R^{13}$, and $R^{14}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected from a halogen atom, a hydroxyl group, a $C_{1-6}$ alkoxy group, an amino group, a $C_{1-6}$

alkylamino group, a di($C_{1-6}$ alkyl)amino group, an aryl group, and a heteroaryl group), an aryl group, and a heteroaryl group; or $R^{12}$ and $R^{13}$, together with nitrogen to which they are bonded, may form a 4- to 7-membered hetero ring containing at least one nitrogen atom;

$R^1$ represents a hydrogen atom, or a $C_{1-8}$ alkyl group that may be substituted with one or more substituents selected from Group B;

$R^2$ represents a $C_{1-8}$ alkyl group substituted with one or more substituents selected from Group B~~.~~; or $R^2$ represents -$COOR^3$, -$COR^4$, -$COSR^5$, -$CONR^6R^7$, -$NR^{22}R^{23}$, or -$N=CR^{24}R^{25}$; or $R^1$ and $R^2$, together with a nitrogen atom to which they are bonded, may form a 4- to 10-membered hetero ring containing at least one nitrogen atom (wherein the hetero ring may be substituted with one or more substituents selected from Group C); wherein

$R^3$ represents a hydrogen atom, a $C_{1-8}$ alkyl group, a $C_{2-7}$ alkenyl group, a $C_{2-7}$ alkynyl group (wherein the alkyl group, alkenyl group, and alkynyl group may be substituted with one or more substituents selected from a halogen atom, a hydroxyl group, a $C_{1-6}$ alkoxy group (wherein the alkoxy group may be substituted with one or more substituents selected from a hydroxyl group, a $C_{1-6}$ alkoxy group, and a phenyl group), a $C_{3-8}$ cycloalkyl group, an aryl group, and a heteroaryl group), a $C_{3-8}$ cycloalkyl group, an aryl group, or a heteroaryl group;

$R^4$ is selected from a hydrogen atom, a $C_{1-8}$ alkyl group that may be substituted with one or more $R^{20}$s, an aryl group, and a heteroaryl group;

$R^5$ is selected from a hydrogen atom, a $C_{1-8}$ alkyl group, an aryl group, and a heteroaryl group;

$R^{20}$ represents a hydroxyl group, a halogen atom, an aryl group, a heteroaryl group, a $C_{1-6}$ alkoxy group (wherein the alkoxy group may be substituted with one or more substituents selected from a halogen atom, an aryl group, and a heteroaryl group), an aryloxy group, a heteroaryloxy group, an amino group (wherein the nitrogen atom of the amino group may be substituted with one or two substituents selected from a $C_{1-8}$ alkyl group, an aryl group, an aryl $C_{1-6}$ alkyl group, a heteroaryl group, and -$COOR^{21}$), or a 4- to 7-membered hetero ring group containing at least one nitrogen atom (wherein the hetero ring group may be substituted with a $C_{1-8}$ alkyl group);

$R^{21}$ represents a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkyl group, or an aryl group;

$R^6$ and $R^7$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group, an aryl group, and a heteroaryl group;

$R^{22}$ and $R^{23}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group, an aryl group, and a heteroaryl group;

$R^{24}$ and $R^{25}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group, an aryl group, and a heteroaryl group;

Group B consists of a halogen atom, a $C_{1-6}$ alkylcarbonyl group, a $C_{1-6}$ alkylaminocarbonyl group, a $C_{1-6}$ alkoxycarbonyl group, an aryl group (wherein the aryl group may be substituted with one or more substituents selected from a halogen atom, a $C_{1-8}$ alkyl group, a $C_{1-8}$ haloalkyl group, a hydroxyl group, a $C_{1-6}$ alkoxy group, and a $C_{1-6}$ haloalkoxy group), a heteroaryl group, $-OR^{31}$, and $-NR^{32}R^{33}$; wherein

$R^{31}$, $R^{32}$, and $R^{33}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected from a halogen atom, a hydroxyl group, a $C_{1-6}$ alkoxy group, an aryl group, an amino group, a $C_{1-6}$ alkylamino group, and a di($C_{1-6}$ alkyl)amino group), an aryl group, a heteroaryl group, and $-COOR^{34}$; wherein $R^{34}$ represents a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkyl group, or an aryl group; or

$R^{32}$ and $R^{33}$, together with a nitrogen atom to which they are bonded, may form a 4- to 7-membered hetero ring containing at least one nitrogen atom (wherein the hetero ring group may be substituted with one or more groups selected from Group D);

Group C consists of an aryl group, a heteroaryl group, a $C_{1-6}$ alkylcarbonyl group, a $C_{1-6}$ alkylaminocarbonyl group, a $C_{1-6}$ alkoxycarbonyl group, a hydroxyl group, a $C_{1-8}$ alkyl group, a $C_{1-6}$ alkoxy group (wherein the alkyl group and alkoxy group may be substituted with one or more substituents selected from a halogen

atom, an aryl group, a heteroaryl group, $-NR^{41}R^{42}$, and $-OR^{43}$), an aryloxy group, and a heteroaryloxy group; wherein

$R^{41}$, $R^{42}$, and $R^{43}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected from a halogen atom, a hydroxyl group, a $C_{1-6}$ alkoxy group, an amino group, a $C_{1-6}$ alkylamino group, and a di($C_{1-6}$ alkyl)amino group), an aryl $C_{1-6}$ alkyl group, an aryl group, and a heteroaryl group; or

$R^{41}$ and $R^{42}$, together with a nitrogen atom to which they are bonded, may form a 4- to 7-membered hetero ring containing at least one nitrogen atom; and

Group D consists of a halogen atom, an aryl group, a heteroaryl group, an aryloxy group, a heteroaryloxy group, an amino group (wherein the nitrogen atom of the amino group may be substituted with one or two substituents selected from a $C_{1-8}$ alkyl group, a hydroxy $C_{1-6}$ alkyl group, a $C_{1-6}$ alkoxy $C_{1-6}$ alkyl group, a $C_{1-6}$ alkylamino $C_{1-6}$ alkyl group, a di($C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl group, an aryl group, an aryl $C_{1-6}$ alkyl group, and a heteroaryl group), a hydroxyl group, a $C_{1-6}$ alkoxy group (wherein the alkoxy group may be substituted with one or more substituents selected from a halogen atom, a hydroxyl group, a $C_{1-6}$ alkoxy group, a $C_{1-6}$ alkylamino group, and di($C_{1-6}$ alkyl)amino group), a $C_{1-6}$ alkoxycarbonyl group, a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected

from a halogen atom, a hydroxyl group, a $C_{1-6}$ alkoxy group, a $C_{1-6}$ alkoxycarbonyl group, an amino group, an aryl group, a heteroaryl group, a $C_{1-6}$ alkylamino group, and a di($C_{1-6}$ alkyl)amino group~~,~~;

or a prodrug or a pharmaceutically acceptable salt of said compound.

**2. (Original)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein $Y^3$ represents $-NR^1R^2$.

**3. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein

$Y^1$, $Y^2$, and $Y^4$ represent a hydrogen atom;

$Y^3$ represents $-NR^1R^2$;

X represents an aryl group or a heteroaryl group, and the aryl group may be substituted with one or more substituents selected from Group A;

Group A consists of a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected from a halogen atom and $-NR^{12}R^{13}$), a halogen atom, a hydroxyl group, an aryl group, an amino group (wherein the nitrogen atom of the amino group may be substituted with one or two substituents selected from a $C_{1-8}$ alkyl group and an aryl group), $-SR^{14}$, a $C_{1-6}$ alkoxy group (wherein the alkoxy group may

be substituted with one or more groups selected from $-OR^{11}$ and a halogen atom), and a 4- to 7-membered hetero ring group (wherein the nitrogen atom of the hetero ring group may be substituted with one or two substituents selected from a $C_{1-8}$ alkyl group and a $C_{1-6}$ alkoxycarbonyl group); wherein

$R^{11}$, $R^{12}$, $R^{13}$, and $R^{14}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group, and an aryl group; or $R^{12}$ and $R^{13}$, together with nitrogen to which they are bonded, may form a 4- to 7-membered hetero ring containing at least one nitrogen atom;

$R^1$ represents a hydrogen atom, or a $C_{1-8}$ alkyl group that may be substituted with one or more substituents selected from Group B;

$R^2$ represents a $C_{1-8}$ alkyl group substituted with one or more substituents selected from Group B, $-COOR^3$, $-COR^4$, $-COSR^5$, $-CONR^6R^7$, $-NR^{22}R^{23}$, or $-N=CR^{24}R^{25}$; or $R^1$ and $R^2$, together with a nitrogen atom to which they are bonded, may form a 4- to 10-membered hetero ring containing at least one nitrogen atom (wherein the hetero ring may be substituted with one or more substituents selected from Group C); wherein

$R^3$ represents a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected from a halogen atom, a hydroxyl group, a $C_{1-6}$ alkoxy group (wherein the alkoxy group may be substituted with one or more

substituents selected from a hydroxyl group, a $C_{1-6}$ alkoxy group, and a phenyl group), a $C_{3-8}$ cycloalkyl group, an aryl group, and a heteroaryl group), a $C_{2-7}$ alkenyl group, a $C_{2-7}$ alkynyl group, a $C_{3-8}$ cycloalkyl group, an aryl group, or a heteroaryl group;

$R^4$ is selected from a hydrogen atom, a $C_{1-8}$ alkyl group that may be substituted with one or more $R^{20}$s, an aryl group, and a heteroaryl group, and $R^5$ is selected from a $C_{1-8}$ alkyl group and an aryl group;

$R^{20}$ represents a hydroxyl group, a halogen atom, an aryl group, a heteroaryl group, a $C_{1-6}$ alkoxy group, an aryloxy group, an aryl $C_{1-6}$ alkoxy group, an amino group (wherein the nitrogen atom of the amino group may be substituted with one or two substituents selected from a $C_{1-8}$ alkyl group, an aryl group, and $-COOR^{21}$), or a 4- to 7-membered hetero ring group containing at least one nitrogen atom (wherein the hetero ring group may be substituted with a $C_{1-8}$ alkyl group);

$R^{21}$ represents a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkyl group, or an aryl group;

$R^6$ and $R^7$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group, and an aryl group;

$R^{22}$, $R^{23}$, $R^{24}$, and $R^{25}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group, an aryl group, and a heteroaryl group;

Group B consists of a halogen atom, a $C_{1-6}$

alkoxycarbonyl group, an aryl group, $-OR^{31}$, and $-NR^{32}R^{33}$; wherein

$R^{31}$, $R^{32}$, and $R^{33}$ are independently selected from a hydrogen atom, a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkyl group, an aryl group, a heteroaryl group, and $-COOR^{34}$; wherein $R^{34}$ represents a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkyl group, or an aryl group; or

$R^{32}$ and $R^{33}$, together with a nitrogen atom to which they are bonded, may form a 4- to 7-membered hetero ring containing at least one nitrogen atom; and

Group C consists of a $C_{1-6}$ alkoxycarbonyl group, a hydroxyl group, a $C_{1-8}$ alkyl group, an aryl $C_{1-6}$ alkoxy $C_{1-8}$ alkyl group, a hydroxy $C_{1-8}$ alkyl group, an aryloxy group, and a heteroaryloxy group.

**4. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein $R^1$ and $R^2$, together with a nitrogen atom to which they are bonded, form a 4- to 10-membered hetero ring containing at least one nitrogen atom, wherein the hetero ring may have a substituent selected from Group C.

**5. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein $Y^2$ or $Y^3$ represents a morpholinyl group, an azetidinyl group, a pyrrolidinyl group, or piperidinyl group, and

the hetero ring group may be substituted with one or more substituents selected from a hydroxyl group and a hydroxy $C_{1-6}$ alkyl group.

**6. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein $Y^2$ or $Y^3$ represents a morpholinyl group, an azetidinyl group, a pyrrolidinyl group, a 3-hydroxypyrrolidinyl group, a 2-hydroxymethylpyrrolidinyl group, a 3-hydroxymethylpyrrolidinyl group, a piperidinyl group, a 3-hydroxypiperidinyl group, a 4-hydroxypiperidinyl group, a 2-hydroxymethylpiperidinyl group, a 3-hydroxymethylpiperidinyl group, a 4-hydroxymethylpiperidinyl group, or a 4-hydroxy-4-hydroxymethylpiperidinyl group.

**7. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein

$R^1$ represents a hydrogen atom or a $C_{1-8}$ alkyl group (wherein the alkyl group may be substituted with one or more substituents selected from Group B); and

$R^2$ represents a $C_{1-8}$ alkyl group substituted with one or more substituents selected from Group B, $-COOR^3$, or $-COCH_2NHCOOR^{21}$.

**8. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein

$R^1$ represents a hydrogen atom; and

$R^2$ represents $-COOR^3$, $-COSR^5$, $-CONR^6R^7$, or $-COR^4$.

**9. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein $R^2$ represents $-COOR^3$.

**10. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 9, wherein $R^3$ represents a $C_{1-8}$ alkyl group, a $C_{2-7}$ alkenyl group, or a $C_{2-7}$ alkynyl group (wherein the alkyl group, alkenyl group, and alkynyl group may be substituted with one or more substituents selected from a halogen atom, a hydroxyl group, or a $C_{1-6}$ alkoxy group (wherein the alkoxy group may be substituted with one or more substituents selected from a hydroxyl group, a $C_{1-6}$ alkoxy group, and a phenyl group)).

**11. (Original)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 10, wherein $R^3$ represents a $C_{1-8}$ alkyl group that is substituted with one or more hydroxyl groups, a $C_{2-7}$ alkenyl group that is substituted with one or more hydroxyl groups, or a $C_{2-7}$ alkynyl

group that is substituted with one or more hydroxyl groups.

**12. (Original)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 11, wherein $R^3$ represents a $C_{1-6}$ alkyl group that is substituted with one or more hydroxyl groups.

**13. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein $Y^2$ or $Y^3$ represents a bis(hydroxy $C_{1-6}$ alkyl)amino group, a methyl(hydroxy $C_{1-6}$ alkyl)amino group, a hydroxy $C_{1-6}$ alkylamino group, a methyl(morpholinyl $C_{1-6}$ alkyl)amino group, an amino $C_{1-6}$ alkylamino group, a $C_{1-6}$ alkoxycarbonylamino group, or a hydroxy $C_{1-6}$ alkoxycarbonylamino group.

**14. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein $Y^2$ or $Y^3$ represents a bis(2-hydroxyethyl)amino group, a methyl(2-hydroxyethyl)amino group, a 2-hydroxyethylamino group, a methyl(2-morpholin-4-ylethyl)amino group, a methyl(2-aminoethyl)amino group, or a 2-hydroxyethyloxycarbonylamino group.

**15. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to

claim 1, wherein X represents a phenyl group or a heteroaryl group, and the phenyl group or heteroaryl group may be substituted with one or more substituents selected from Group A.

**16. (Currently Amended)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to ~~claims~~ claim 1, wherein X represents a phenyl group, and the phenyl group may be substituted with one or more substituents selected from Group A.

**17. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1, wherein

X represents a phenyl group or a heteroaryl group, and the phenyl group or heteroaryl group may be substituted with one or more substituents selected from Group A; and

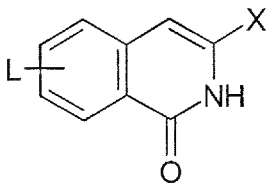
Group A consists of a $C_{1-8}$ alkyl group that is substituted with one or more halogen atoms, an aryl group, a $C_{1-6}$ alkylthio group, a di($C_{1-6}$ alkyl)amino group, a 4- to 7-membered hetero ring group containing at least one nitrogen atom, a $C_{1-8}$ alkyl group, a $C_{2-7}$ alkenyl group, a $C_{2-7}$ alkynyl group, a $C_{1-6}$ alkoxy group (wherein the alkoxy group may be substituted with one or more halogen atoms), and a hydroxyl group.

**18. (Previously Presented)** The compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to

claim 1, wherein X represents a phenyl group, and the phenyl group may be substituted with one or more substituents selected from an ethyl group, a trifluoromethyl group, a trifluoromethoxy group, a methylthio group, a methoxy group, a chloro group, a phenyl group, a dimethylamino group, a morpholinyl group, a piperidinyl group, and a pyrrolidinyl group.

**19. (Currently Amended)** A compound represented by the following formula IV:

~~[Formula IV]~~

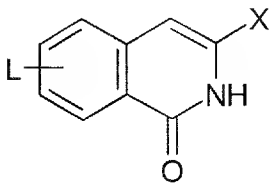



IV

(wherein X represents a phenyl group or a heteroaryl group, and the phenyl group or heteroaryl group may be substituted with one or more substituents selected from Group A; and L represents ~~a halogen atom~~ a fluorine atom, a bromine atom, or an iodine atom that is bonded to the 6- or 7- position on an isoquinolone ring).

**20. (Currently Amended)** A method for producing the compound according to claim 1, which comprises amination of a compound represented by the following formula IV:

~~[Formula IV]~~




IV

(wherein X represents a phenyl group or a heteroaryl group, and the phenyl group or heteroaryl group may be substituted with one or more substituents selected from Group A; and L represents a fluorine atom, a bromine atom, or an iodine atom ~~halogen atom~~ that is bonded to the 6- or 7- position on an isoquinolone ring).

**21. (Previously Presented)** A pharmaceutical composition, which comprises, as an active ingredient, the compound, prodrug thereof, or pharmaceutically acceptable salt thereof according to claim 1.

**22. (Cancelled)**

**23. (Cancelled)**